The Image of Psychology Programs:
The Value of the Instrumental–Symbolic Framework

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Abstract

As competition for funding and students intensifies, it becomes increasingly important for psychology programs to have an image that is attractive and makes them stand out from other programs. The current study uses the instrumental–symbolic framework from the marketing domain to determine the image of different master's programs in psychology and examines how these image dimensions relate to student attraction and competitor differentiation. The samples consist of both potential students (N = 114) and current students (N = 68) of three psychology programs at a Belgian university: industrial and organizational psychology, clinical psychology, and experimental psychology. The results demonstrate that both instrumental attributes (e.g., interpersonal activities) and symbolic trait inferences (e.g., sincerity) are key components of the image of psychology programs and predict attractiveness as well as differentiation. In addition, symbolic image dimensions seem more important for current students of psychology programs than for potential students.

Keywords: Education; image; instrumental–symbolic framework; marketing; psychology.

The Image of Psychology Programs:

The Value of the Instrumental–Symbolic Framework

Although differences exist between universities and countries, students interested in becoming psychologists typically start with an introductory (bachelor's or undergraduate) program in general psychology, followed by a more specialized (master's or graduate) program focusing on a specific subfield of psychology, such as clinical psychology or industrial and organizational (I/O) psychology (Brewer, 2006). This implies that after the general program, students have different options to choose from and thus advanced programs in psychology need to consider what makes them attractive for students and how they are different from other programs trying to attract the same students.

In fact, in recent years, it has become increasingly important for programs of higher education to attract students and to distinguish themselves from competing programs (Marginson, 2006). As governmental support is diminishing and enrollment fees represent one of the main sources of income, educational programs are forced to pursue the necessary funding themselves by proactively attracting students. In addition, the harmonization of academic degrees across countries as a consequence of globalization has contributed to students' increased mobility and educational decision latitude (Duarte, Alves, & Raposo, 2010).

Previous research suggests that the image of educational programs might be a key factor in explaining their attractiveness to students (Kazoleas, Kim, & Moffitt, 2001). However, past studies have applied different conceptualizations and measurements of educational image, making it difficult to integrate research findings and accumulate knowledge. For instance, Duarte et al. (2010) observed that perceived employment opportunities, communication, social life, and course image were the most important components of university image for first-year students. Taking a teaching staff perspective, Luque–Martínez and Del Barrio–García (2009) found that

university image perceptions were mainly determined by the university's services to society, teaching activity, administrative management, and technological infrastructure. In addition, as illustrated by these examples, research has mainly focused on the overall image of educational institutions, ignoring the differences and competition that are likely to exist between various programs and departments within the same institution (Arpan, Raney, & Zivnuska, 2003). Along these lines, to the best of our knowledge, the image components of specific psychology programs have not been examined.

In search of a uniform theory-driven approach towards conceptualizing and assessing image across different educational settings, the marketing literature might provide valuable insights. This seems appropriate, given that the intensified competition for funding and students is forcing educational institutions and programs to "become more involved in marketing activities to create and sustain strong brands in order to enhance awareness and differentiate themselves and their courses from the vast array of offers" (Duarte et al., 2010, p. 22). Therefore, we propose that the instrumental–symbolic framework that has been used to examine brand image in marketing can also be applied to identify the key components of image in an educational context.

The purpose of this study consists of using the instrumental–symbolic framework to examine and compare the image components of three competing master's programs in psychology at a large Belgian university, namely I/O psychology, clinical psychology, and experimental psychology. In addition, the perceptions of both potential students (external image) and current students (internal image) of these programs are considered. This image audit should enable each psychology program to obtain insights into the specific "brand" it offers to students, thereby potentially providing clues to better attract students and to better distinguish itself from the competitor programs. In addition, we propose that our image audit methodology can also be applied by other educational programs and institutions to determine and manage their own

images.

The Instrumental–Symbolic Framework in Marketing

Within the marketing literature, a brand's image or "perceptions about a brand as reflected by the brand associations held in consumer memory" (Keller, 1993, p. 3) has long been recognized as a major determinant of consumers' product choices. A relevant and established paradigm for studying brand image has been the instrumental–symbolic framework, which builds on the key assumption that instrumental attributes as well as symbolic trait inferences shape people's image perceptions (Lievens & Highhouse, 2003). The notion that people associate both instrumental functions and symbolic meanings with objects is in line with a long tradition in social and consumer psychology (Katz, 1960; Shavitt, 1990).

First, instrumental image dimensions are attributes that describe a product in terms of objective, tangible, and concrete characteristics (Keller, 1993). They are linked to people's need to maximize benefits and minimize costs (Katz, 1960). For instance, consumers might buy a particular soft drink because it quenches their thirst, tastes great, or contains few calories.

Second, symbolic image dimensions are linked to people's need to maintain their self-identity, to enhance their self-image, or to express themselves (Aaker, 1997). They refer to a product in terms of subjective, trait-related, abstract, and intangible characteristics. These symbolic meanings deal with how people perceive the brand and make inferences about it rather than what they think its objective characteristics are (Keller, 1993). For instance, consumers might prefer a brand of soft drinks because it seems popular or trendy. Although individuals may associate a variety of traits with brands, research has shown that these symbolic traits are best represented by five higher-order factors that generalize across different contexts and cultures: sincerity, innovativeness, competence, prestige, and robustness (Aaker, 1997; Aaker, Benet–Martinez, & Garolera, 2001; Lievens & Highhouse, 2003). Sincerity (e.g., honest) encompasses

traits referring to warmth and honesty, and is therefore conceptually related to the agreeableness factor of the Five-Factor Model underlying human personality (Digman, 1990). Similarly, innovativeness (e.g., trendy) reflects elements of extraversion whereas competence (e.g., successful) resembles conscientiousness (Lievens & Highhouse, 2003). The other two factors, prestige (e.g., well respected) and robustness (e.g., tough), capture more aspirational images associated with respectively wealth and status, and individualism and masculinity (Aaker, 1997).

Empirical research has generally supported the assumptions of the instrumental–symbolic framework, showing that both instrumental attributes and symbolic trait inferences are associated with individuals' attraction to products, services, and organizations, and are useful in differentiating between competing brands (Lievens & Highhouse, 2003).

The Instrumental–Symbolic Framework and the Image of Psychology Programs

The instrumental–symbolic framework has various implications for assessing the image of psychology programs. Whereas previous research has mainly focused on the instrumental components of educational image (Duarte et al., 2010), this framework suggests that symbolic trait inferences should also be taken into account. So, as a first implication, we propose that the image of a psychology program consists of individuals' perceptions of its instrumental attributes as well as of the symbolic traits they associate with it. As such, the instrumental–symbolic framework suggests that both instrumental and symbolic image dimensions are likely to play a part in the attraction of students to psychology programs (Keller, 1993).

Hypothesis 1a: Instrumental attributes are related to the attractiveness of psychology programs.

Hypothesis 1b: Symbolic trait inferences are related to the attractiveness of psychology programs.

Second, due to the increased competition in the field of higher education, psychology

programs should not only consider what image dimensions make them attractive for students, but also what image dimensions make them stand out from their competitors (Marginson, 2006). Along these lines, the instrumental–symbolic framework implies that both instrumental attributes and symbolic trait inferences are useful for distinguishing a psychology program from other programs competing for the same students (Lievens & Highhouse, 2003). In this study, we investigate whether students' perceptions of instrumental and symbolic image dimensions can be used to differentiate between three competing psychology programs: I/O psychology, clinical psychology, and experimental psychology.

Hypothesis 2a: Psychology programs can be differentiated on the basis of instrumental attributes.

Hypothesis 2b: Psychology programs can be differentiated on the basis of symbolic trait inferences.

Third, psychology programs are not only concerned with attracting new students, but also with meeting their expectations after they have enrolled (Arpan et al., 2003). Hence, the present study examines both the *external* image perceptions of students who still have to choose in which of the three competing psychology programs they will enroll (i.e., potential students) and the *internal* image perceived by students who have already enrolled in one of these programs (i.e., current students). On the basis of the instrumental–symbolic framework, we expect that instrumental as well as symbolic image dimensions will contribute to the attractiveness and distinctiveness of psychology programs for both potential and current students (Hypotheses 1–2). However, we propose that the symbolic trait inferences associated with psychology programs will be more important for current students than for potential students. Social identity theory states that individuals' identity is partly determined by their group membership and that people ascribe a group identity to the organizations they belong to (Ashforth & Mael, 1989). Previous research

has shown that the symbolic meanings that employees attach to their organization in order to develop an organizational identity closely resemble the symbolic traits associated with employer brand image (Lievens, 2007). Similarly, the current students in the present study are likely to identify more with their chosen psychology program that they are already part of and thus to associate more symbolic traits with it than potential students.

Hypothesis 3a: Symbolic trait inferences contribute more to the attractiveness of psychology programs for current students than for potential students.

Hypothesis 3b: Symbolic trait inferences contribute more to the distinctiveness of psychology programs for current students than for potential students.

Method

Context

In Belgium, two major types of bachelor's programs exist. Professional bachelor's programs, which are taught at vocational colleges, are practice-oriented and directly prepare students for specific professions on the labor market. Academic bachelor's programs, which are taught at universities, prepare students for pursuing a master's degree, as an academic bachelor's degree grants direct access to the corresponding master's program. Hence, almost all students who obtain an academic bachelor's degree continue with a master's program taught at the same universities. Conversely, only a small percentage of students pursue a graduate degree, involving the preparation of a doctoral dissertation. To this end, they must first obtain their master's degree in the corresponding field. In addition, direct access is not guaranteed, as students need to apply for a limited number of places or grants in the graduate program.

Sample and Procedure

Data were collected in two samples of psychology students from a large Belgian university. After finishing a general academic bachelor's program in psychology, students at this

university continue with one of three different master's programs: (1) industrial and organizational (I/O) psychology, (2) clinical psychology, or (3) experimental psychology. Academic bachelor's students can be regarded as *potential* students that the three master's programs want to attract and compete for.[1] Conversely, master's students are *current* students already enrolled in one of the programs. All academic bachelor's and master's students in psychology at this university were sent an e-mail with a cover letter explaining the study and an Internet link to the questionnaire. Participation was voluntary and anonymous. A few weeks later a reminder e-mail was sent.

The *potential* student sample consisted of 146 academic bachelor's students in psychology (25% response rate) who still had to choose in which master's program they would enroll. They were randomly assigned to one of the three competing programs and were asked to rate its (external) image and attractiveness. Cases with more than 10% missing values were excluded, yielding useable data for 114 potential students. Of this final sample, 86% was female and age ranged from 18 to 23 years (M = 19.71, SD = .99).

The *current* student sample consisted of 75 master's students in psychology (17% response rate) who assessed the (internal) image and attractiveness of the master's program in which they had enrolled. After exclusion of cases with more than 10% missing values, 68 students remained in the final sample. Of these, 88% was female and age ranged from 20 to 24 years (M = 21.82, SD = 1.09).

Measures

All items are included in the Appendix and were rated on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Internal consistency reliabilities are shown in Table 1.

Image of psychology programs. First, we used an inductive qualitative strategy for

identifying *instrumental* image dimensions possibly related to the attractiveness of psychology programs. In a prestudy, 45 academic bachelor's students (62% women; mean age = 19.82 years, *SD* = 1.75) and 15 master's students (80% women; mean age = 22.20 years, *SD* = .41) in psychology were presented with randomly chosen pairs of the three master's programs in psychology and were asked (a) to indicate which program they would prefer to enroll in and (b) to write down a maximum of three reasons to motivate their decision. From the analysis of all reasons elicited, four main categories of instrumental attributes emerged: interpersonal activities, advancement opportunities, task diversity, and employment opportunities. Two items were written to measure each dimension, resulting in an 8-item scale.

Next, *symbolic* image dimensions were measured with an adapted version of Aaker's (1997) brand personality scale, developed and validated by Lievens and Highhouse (2003) to measure symbolic images of organizations. This scale that was found to be generalizable across settings and cultures (Aaker, 1997; Aaker et al., 2001) consists of five distinct factors that capture the symbolic traits that students might associate with psychology programs: sincerity, innovativeness, competence, prestige, and robustness. All factors were measured with three items.

A confirmatory factor analysis showed that the hypothesized nine factor model of the image of psychology programs, consisting of four instrumental and five symbolic dimensions, produced a satisfactory fit to the data, $\chi^2(194) = 315.57$, $p < .001$, $\chi^2/df = 1.63$, *IFI* = .920, *CFI* = .917, *RMSEA* = .060. However, inspection of the factor loadings revealed that one item of the competence scale had a standardized loading of only .24, with all other items loading well over .50. Removing this item led to a significantly better model fit, $\Delta\chi^2(21) = 38.99$, $p < .01$, with $\chi^2(173) = 276.58$, $p < .001$, $\chi^2/df = 1.60$, *IFI* = .931, *CFI* = .928, *RMSEA* = .058. In addition, the

internal consistency of the competence scale increased from .59 to .73, comparable with values obtained in prior research (e.g., .75 in Lievens & Highhouse, 2003). Hence, the final measure consisted of 14 items.

Attractiveness of psychology programs. Three items that were developed by Lievens and Highhouse (2003) to measure organizations' perceived attractiveness as an employer were adapted to measure the perceived attractiveness of psychology programs for students.

Control variables. Given that gender and age were significantly related to some of the image dimensions (see Table 1), they were included as control variables in the analyses.

Results

Potential Student Sample: External Image

Table 1 presents descriptive statistics for the academic bachelor's students who still have to choose between the three competing psychology programs (i.e., potential students). Consistent with the instrumental–symbolic framework, three instrumental image dimensions (interpersonal activities, advancement, and task diversity) were positively related to the attractiveness of the programs. Regarding the symbolic image dimensions, innovativeness and prestige were positively related to attractiveness, whereas robustness was negatively related. Prior research on the attractiveness of organizations has reported both positive and negative correlations for robustness, which might reflect individual differences in individualistic values (Van Hoye & Saks, 2011).

The first set of hypotheses stated that instrumental attributes (1a) and symbolic trait inferences (1b) will predict the attractiveness of psychology programs. Therefore, a hierarchical regression analysis was conducted. The control variables were added in the first step, the instrumental image dimensions in the second step, and the symbolic image dimensions in the third step. The instrumental–symbolic framework suggests that the more abstract symbolic trait

inferences typically accrue from the more concrete instrumental attributes (Keller, 1993). Therefore, it is conceptually relevant – and consistent with prior research (Lievens & Highhouse, 2003) – to enter the symbolic image dimensions after the instrumental dimensions.[2] As shown in Table 2, the instrumental image dimensions explained considerable variance (47.1%) in attractiveness, $F(4,107) = 23.83$, $p < .001$, in support of Hypothesis 1a. In particular, potential students were more attracted to psychology programs offering more opportunities for interpersonal activities and task diversity. In the final step, the symbolic image dimensions did not explain significant incremental variance, $F(5,102) = 1.25$, $p = .29$, failing to support Hypothesis 1b.

The next hypotheses proposed that the three psychology programs can be differentiated from each other on the basis of instrumental (2a) and symbolic (2b) image dimensions. Table 3 presents potential students' image ratings of the three programs as well as the results of one-way analyses of variance. The programs were perceived to be significantly different from each other on all four instrumental dimensions and on two symbolic dimensions (competence and robustness). In addition, a discriminant function analysis was conducted to determine which image dimensions maximally discriminated between the psychology programs. Two discriminant functions were significant. The first function explained 57% of the variance between the programs, $\chi^2 (18) = 148.38$, $p < .001$, whereas the second function accounted for 43%, $\chi^2 (8) = 66.22$, $p < .001$. Using the within-group structure coefficients > .50 to interpret these functions, Table 4 shows that interpersonal activities loaded highly on the first function, whereas employment had a high loading on the second function. To examine which psychology programs were maximally discriminated on these functions, we inspected the group centroids, which indicate the location of the three programs on both functions. For the first function, clinical

psychology was situated at the positive end and experimental psychology at the negative end, indicating that potential students perceived these programs to be maximally different from each other in terms of interpersonal activities. For the second function, I/O psychology was located at the positive end and clinical psychology at the negative end, suggesting that potential students perceived these programs to be the furthest apart in terms of employment opportunities. Together, these findings provide strong support for Hypothesis 2a, but only weak support for Hypothesis 2b.

Current Student Sample: Internal Image

For the master's students already enrolled in one of the three psychology programs (i.e., current students), Table 1 shows that three instrumental image dimensions (interpersonal activities, advancement, and task diversity), and one symbolic image dimension (sincerity) were positively related to attractiveness, whereas robustness was negatively related.

To test the first hypotheses regarding the relationship of instrumental (1a) and symbolic (1b) image dimensions with attractiveness, a hierarchical regression analysis was conducted with the control variables entered in the first step, the instrumental attributes in the second step, and the symbolic trait inferences in the final step.[3] As shown in Table 2, the addition of instrumental image dimensions explained substantial variance (39.8%) in the second step, $F(4,59) = 10.33$, $p < .001$, supporting Hypothesis 1a. Specifically, interpersonal activities and task diversity were positive predictors of current students' attraction to the psychology programs, similar to the results for potential students. In the third step, the symbolic image dimensions also accounted for incremental variance (14.4%), $F(5,54) = 3.65$, $p = .006$, consistent with Hypothesis 1b. In particular, current students were more attracted to programs perceived as more sincere and innovative. Notably, none of the instrumental attributes remained significant in the final step.

The next set of hypotheses stated that instrumental attributes (2a) and symbolic trait

inferences (2b) can be used to distinguish between the different psychology programs. The image ratings and one-way analyses of variance in Table 3 indicate that current students perceived the three programs to be significantly different from each other on all instrumental and symbolic dimensions, except for prestige. In addition, a discriminant function analysis revealed two significant discriminant functions, with the first function explaining 72% of the variance, χ^2 (18) = 138.92, $p < .001$, and the second function 28%, χ^2 (8) = 50.00, $p < .001$. The within-group structure coefficients in Table 4 indicate that interpersonal activities had a high loading on the first function, whereas employment and competence loaded highly on the second function. Furthermore, the group centroids show that the experimental psychology program was situated at the negative end of both functions, whereas clinical psychology was located at the positive end of the first function and I/O psychology at the positive end of the second function. Thus, current students perceived experimental psychology to be maximally different from clinical psychology in terms of interpersonal activities and to be maximally different from I/O psychology in terms of employment opportunities and competence. Together, these findings provide support for both Hypotheses 2a and 2b.

Comparison of Potential and Current Student Sample

The final set of hypotheses proposed that symbolic trait inferences will contribute more to the attractiveness (3a) and to the distinctiveness (3b) of psychology programs for current students than for potential students. From the above analyses (see Table 2), we can conclude that the instrumental image dimensions, in particular interpersonal activities and task diversity, explained roughly similar amounts of variance in the attractiveness of psychology programs for both potential and current students. However, in support of Hypothesis 3a, the symbolic image dimensions only explained incremental variance in attractiveness in the current student sample.

Moreover, when all image dimensions were taken into account (in the final step), potential students' attraction to psychology programs was significantly predicted only by instrumental attributes, whereas current students' attractiveness perceptions were significantly predicted only by symbolic trait inferences.

With respect to the distinctiveness of psychology programs (see Tables 3 and 4), instrumental attributes seemed about equally important in both samples as well, with interpersonal activities and employment opportunities maximally discriminating among the three programs. Again, symbolic image dimensions seemed to matter more for current students, as they perceived the psychology programs to be significantly different on four out of five symbolic trait inferences (versus only two out of five in the potential student sample) and competence assisted in discriminating between the programs. This provides support for Hypothesis 3b.

Discussion

This study yields a number of conclusions that provide insights into the image of psychology programs. First, consistent with the key assumptions of the instrumental–symbolic framework (Keller, 1993), this study demonstrated that both instrumental attributes and symbolic trait inferences are valid components of the image of psychology programs and predict their attractiveness. Specifically, both potential and current students were more attracted to psychology programs perceived to offer more interpersonal activities and task diversity, which represent instrumental image dimensions. Concerning the symbolic dimensions of educational image, only current students were more attracted to psychology programs perceived as more sincere and innovative. As previous research has mainly focused on objective and tangible determinants of educational image (Duarte et al., 2010), the impact of symbolic trait inferences on educational image has remained underestimated thus far. Therefore, the current conceptualization and measurement of the image of educational programs should be broadened to also include symbolic

traits.

In addition to identifying the instrumental and symbolic image dimensions that predict student attraction, the instrumental–symbolic framework also allows to determine which dimensions make educational programs stand out from their competitors (Lievens & Highhouse, 2003). Although both instrumental and symbolic dimensions assisted in discriminating between the three competing psychology programs, it was somewhat easier for students to differentiate programs on the basis of instrumental attributes. Specifically, both potential and current students relied on interpersonal activities and employment opportunities to differentiate between the programs, whereas competence only served as a point of differentiation for current students. Importantly, the dimension of interpersonal activities was also a significant predictor of attraction whereas employment opportunities and competence were not, revealing the key role of interpersonal activities in attracting students for the psychology programs in the present study. As differentiating between educational competitors has only received scant research attention thus far, the present study breaks new ground by emphasizing differentiation in addition to attraction within the domain of educational image.

The third contribution of the proposed image audit methodology concerns the focus on diverse stakeholders as both internal and external image perceptions can be assessed. Although some researchers have already noted the necessity of including multiple stakeholder groups in audits of educational image (Arpan et al., 2003), most studies thus far have focused on solely one sample of interest. In line with social identity theory (Ashforth & Mael, 1989), we found that symbolic trait inferences contributed more to the attractiveness and distinctiveness of psychology programs for current students than for potential students. Current students are more likely to identify with the specific program that they already belong to and to attach symbolic meanings to it in developing their group identity.

At a practical level, this study's approach to examine the key image dimensions of psychology programs at a Belgian university represents a methodology that can be applied to assess and manage educational image across different settings and target groups. To this end, Table 5 outlines an eight-step "image audit" methodology. Results from such an audit permit higher education programs to be benchmarked relative to one another on critical instrumental and symbolic dimensions of their image and allow internal and external stakeholder comparisons of image and attractiveness ratings. These audit results might then provide valuable insights on what actions are required in the context of image management. The attractiveness and distinctiveness of a program's image might be enhanced either by altering communication strategies (i.e., changing students' perceptions) or by making real changes in the program. For instance, for the psychology programs in the present study, the results of the image audit point to interpersonal activities as the most important image dimension, contributing to attraction and differentiation for both potential and current students. With respect to image management, in its communication the clinical psychology program should emphasize interpersonal activities as one of its main strengths, contributing to its attractiveness relative to the other psychology programs. Conversely, the experimental psychology program might enhance its image and attractiveness by making some changes to create more opportunities for interpersonal contact during the program (e.g., group assignments).

This study is not without limitations. First, caution is required in generalizing the results to other educational programs, departments, or universities around the world. Although we believe our overall framework (i.e., the broad distinction between instrumental and symbolic dimensions of image) to be generalizable, the specific dimensions (e.g., interpersonal activities) within this framework that contribute to attraction and differentiation might differ in other contexts. As another limitation, we relied on self-report measures gathered by a single survey.

Thus, common method variance might have affected the results. Last, the cross-sectional nature of the data prevents drawing causal conclusions.

In terms of future research, longitudinal research is needed that follows the same students before, during, and after their educational choices (Lievens, 2007). As potential students move on to be actual students, they are provided with new information that might affect their perceptions of educational image dimensions as well as the importance they attach to them. Hence, future research should examine how initial educational image is carried forward into being a student and affects identification and retention. Another promising avenue for future research consists of incorporating students' personal attributes. Whereas we investigated the main effects of educational image, a person–environment fit perspective suggests that students prefer educational environments that are compatible with their own characteristics (Kristof–Brown, Zimmerman, & Johnson, 2005). Along these lines, future research needs to examine whether students' personal characteristics moderate the effects of educational image dimensions.

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Footnotes

1 Data collected by the university's student administration office indicate that 93.12% of the students obtaining their academic bachelor's degree in psychology at the end of the year in which our research was conducted actually started in one of the three corresponding master's programs in psychology at the same university the next year.

2 When these analyses were repeated with the image dimensions entered in the reverse order, the symbolic dimensions accounted for 24.8% of incremental variance in potential students' attractiveness perceptions beyond the control variables, $F(5,106) = 7.01$, $p < .001$, with prestige as the only significant predictor ($\beta = .38$, $p < .001$). In the final step, the instrumental dimensions explained 25.3% of additional variance, $F(4,102) = 12.96$, $p < .001$, with interpersonal activities and task diversity as positive predictors, whereas prestige was no longer significant (see final step in Table 2).

3 When these analyses were repeated with the image dimensions entered in the reverse order, the symbolic trait inferences explained 42.3% of the variance in current students' attractiveness perceptions beyond the control variables, $F(5,58) = 9.05$, $p < .001$, with sincerity ($\beta = .37$, $p = .001$), innovativeness ($\beta = .35$, $p = .005$), and robustness ($\beta = –.40$, $p = .001$) as significant predictors. In the final step, the instrumental attributes accounted for 11.8% of incremental variance, $F(4,54) = 3.75$, $p = .009$, even though none of the individual attributes reached statistical significance (see final step in Table 2).

Appendix

Study Measures

Variable	Items
Instrumental Image	*This psychology program …*
Interpersonal activities	Allows me to frequently interact with other people
	Offers opportunities for working closely with other people
Advancement	Offers career advancement opportunities
	Offers possibilities for building a career
Task diversity	Involves a lot of variation
	Allows doing different things
Employment	Offers good chances of finding employment
	Enables me to quickly find a job
Symbolic Image	*I perceive this psychology program as …*
Sincerity	Honest
	Sincere
	Real
Innovativeness	Trendy
	Exciting
	Cool
Competence	Successful
	A leader
Prestige	Prestigious
	Highly regarded
	Well respected
Robustness	Masculine
	Tough
	Rugged
Perceived Attractiveness	Being a student enrolled in this psychology program is very appealing to me
	This psychology program is attractive to me as an educational choice
	For me, this psychology program is a good program to study

Table 1

Means, Standard Deviations, Correlations, and Internal Consistencies of Study Variables

		Potential students													Current students	
		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	*M*	*SD*
Control variable																	
1.	Gender[a]	.86	.35	–	–.06	.11	–.11	.00	–.08	–.07	–.20	.06	–.01	.00	.05	.88	.32
2.	Age	19.71	.99	–.20*	–	–.23†	.12	–.16	.19	–.06	.23†	.34**	–.04	.31*	–.18	21.82	1.09
Instrumental image																	
3.	Interpersonal activities	3.44	1.18	–.04	–.03	(.88)	.16	.52**	–.17	.39**	.19	.11	.20	–.53**	.58**	4.18	1.00
4.	Advancement	3.74	.95	–.12	–.06	.54**	(.80)	.46**	.66**	.10	.33**	.48**	.29*	.16	.28*	4.05	.69
5.	Task diversity	2.93	.94	–.21*	.09	.54**	.62**	(.71)	.20	.31**	.23†	.10	.35**	–.31**	.54**	3.69	.82
6.	Employment	3.07	1.16	–.10	–.20*	.16†	.56**	.33**	(.92)	–.13	.28*	.49**	.14	.39**	.02	2.85	1.25
Symbolic image																	
7.	Sincerity	3.55	.70	–.01	–.19*	.19*	.07	.12	–.09	(.85)	.10	.08	.27*	–.37**	.52**	3.60	.62
8.	Innovativeness	3.10	.89	.02	–.05	.07	.18†	.17†	.17†	–.17†	(.71)	.48**	.36**	.26*	.20	3.10	.73
9.	Competence	3.81	.78	.18†	.05	.16†	.16†	.17†	.14	–.14	.30**	(.73)	.28*	.34**	.04	3.38	.82
10.	Prestige	3.39	.75	–.08	.09	.41**	.45**	.48**	.07	.24*	.22*	.15	(.73)	–.05	.14	3.52	.81
11.	Robustness	3.01	.79	.06	–.13	–.24**	–.03	–.12	.17†	–.13	.11	.19*	–.18†	(.74)	–.45**	2.62	.81
Dependent variable																	
12.	Attractiveness	3.01	1.41	–.02	.01	.59**	.46**	.60**	.16†	.14	.21*	.13	.46**	–.19*	(.97)	4.25	.88

Note. Correlations below the diagonal are for the potential student sample (N = 114); above the diagonal for the current student sample (N = 68). Internal consistency reliabilities are reported in parentheses on the diagonal. [a] 0 = *male*, 1 = *female*. † $p < .10$. * $p < .05$. ** $p < .01$.

Table 2

Hierarchical Regression of Attractiveness on Instrumental and Symbolic Image Dimensions

Predictor	Potential students			Current students		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Control variables						
Gender[a]	–.02	.08	.08	.04	.02	.13
Age	.01	–.01	–.01	–.18	–.04	–.06
Instrumental image						
Interpersonal activities		.36**	.34**		.40**	.18
Advancement		.05	–.01		.12	.16
Task diversity		.42**	.37**		.29*	.21
Employment		–.05	–.01		–.05	.04
Symbolic image						
Sincerity			.00			.32**
Innovativeness			.11			.24*
Competence			–.04			–.08
Prestige			.13			–.19[†]
Robustness			–.06			–.24[†]
R^2	.001	.471**	.502**	.034	.432**	.575**
Adjusted R^2	–.017	.442**	.448**	.003	.374**	.489**
ΔR^2	.001	.471**	.031	.034	.398**	.144**

Note. The values in the table are standardized beta weights (β). [a] 0 = *male*, 1 = *female*. [†] $p < .10$. * $p < .05$. ** $p < .01$.

Table 3

Comparison of Psychology Programs Across Instrumental and Symbolic Image Dimensions

	Potential students							Current students						
	I/O psychology		Clinical psychology		Experimental psychology			I/O psychology		Clinical psychology		Experimental psychology		
	M	*SD*	*M*	*SD*	*M*	*SD*	*F-value*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F-value*
Instrumental image														
Interpersonal activities	3.79	.78	4.27	.86	2.32	.92	52.62**	4.08	.73	4.61	.48	1.93	.79	60.86**
Advancement	4.17	.64	3.76	.84	3.24	1.10	11.67**	4.53	.47	3.85	.67	3.86	.69	8.19**
Task diversity	3.08	.84	3.30	1.01	2.43	.78	9.80**	3.68	.82	3.89	.69	2.57	.73	9.63**
Employment	3.99	.82	2.33	.83	2.66	1.05	36.92**	4.18	.92	2.17	.86	3.07	.89	35.23**
Symbolic image														
Sincerity	3.47	.71	3.60	.68	3.60	.71	0.47	3.40	.73	3.75	.54	3.29	.49	3.33*
Innovativeness	3.27	.82	3.02	.77	2.96	1.03	1.38	3.48	.71	2.98	.64	2.71	.93	4.71*
Competence	4.03	.70	3.77	.69	3.58	.87	3.68*	4.05	.54	3.12	.78	2.93	.53	13.53**
Prestige	3.43	.76	3.55	.76	3.20	.72	2.00	3.47	.82	3.56	.81	3.48	.90	0.10
Robustness	3.03	.70	2.74	.80	3.21	.82	3.36*	3.07	.83	2.27	.62	3.43	.63	14.50**

Note. † $p < .10$. * $p < .05$. ** $p < .01$.

Table 4

Within-Group Structure Coefficients and Group Centroids for Discriminant Functions

	Potential students		Current students	
	Function 1	Function 2	Function 1	Function 2
Structure coefficients				
Instrumental image				
Interpersonal activities	.90	.06	.68	.49
Advancement	.31	.34	–.13	.38
Task diversity	.39	.02	.26	.22
Employment	.08	.88	–.40	.63
Symbolic image				
Sincerity	–.02	–.10	.16	–.06
Innovativeness	.06	.15	–.05	.33
Competence	.15	.22	–.14	.55
Prestige	.18	–.01	.03	–.02
Robustness	–.21	.10	–.35	.11
Group centroids				
I/O psychology	.38	1.13	–1.33	1.50
Clinical psychology	1.16	–1.03	1.35	–.37
Experimental psychology	–1.43	–.38	–3.95	–2.17

Note. Coefficients > .50 are underlined.

Table 5

Overview of Image Audit Methodology on the Basis of the Instrumental–Symbolic Framework

Step	Activities
Step 1	*Determine target samples* Relevant internal and external samples of stakeholders are identified as well as which competitors to include in the audit.
Step 2	*Conduct prestudy* A qualitative prestudy among relevant samples is conducted to elicit possible instrumental dimensions of educational image.
Step 3	*Develop questionnaire* For each instrumental image dimension identified in the prestudy, a number of items is written or adapted from previous research. The more generalizable symbolic image dimensions can be measured with an adapted version of Aaker's (1997) brand personality scale.
Step 4	*Administer questionnaire* Respondents of relevant samples rate instrumental and symbolic image dimensions as well as attractiveness.
Step 5	*Identify key image dimensions for attraction* Regression analyses are conducted to determine which dimensions of educational image predict attractiveness.
Step 6	*Identify key image dimensions for differentiation* Discriminant function analyses are conducted to determine which image dimensions maximally discriminate between competitors.
Step 7	*Benchmark* The ratings of instrumental and symbolic dimensions of educational image can be compared across competitors and stakeholders (internal versus external).
Step 8	*Develop interventions to manage image* Changing stakeholders' perceptions of the key image dimensions identified in the previous steps can enhance attraction and differentiation from competitors.